Clark

Clark Overview

Monitoring began at Clark Lake in 2003 and continued through 2004. The data collected classify this lake in the city of Kent as moderate to high in primary productivity (mesotrophic - eutrophic) with fair water quality.

Clark Lake is located in a Kent city park and is open to car top boats. City staff and lake users should watch near-shore aquatic plants to catch early infestations of Eurasian milfoil, Brazilian elodea or other noxious aquatic weeds.

Lake Temp, Secchi Depth, Lake Level and Precip

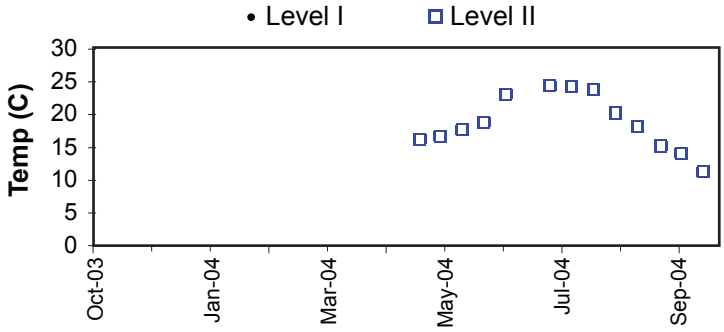
The Level II Secchi transparency ranged between 1.0 and 3.5m during the sampling season, averaging 1.8 m which placed it in the lower range of the small lakes monitored in 2004. The May through October surface water temperatures reached a maximum of 24.1 degrees Celsius, putting it at the lower end of the range of the monitored lakes.

No precipitation or water level records were available for the year.

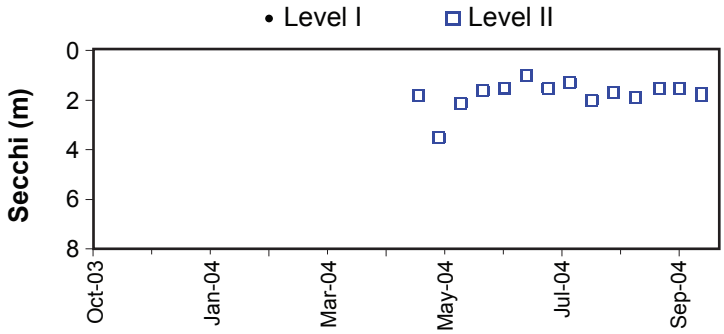
Nutrient Analysis and TSI Ratings

Both total phosphorus and nitrogen remained fairly constant through the season, with a small increase in early June and again in the fall. The N:P ratio ranged from 26 to 39, averaging 33 and suggesting moderately poor conditions for nuisance bluegreen growth.

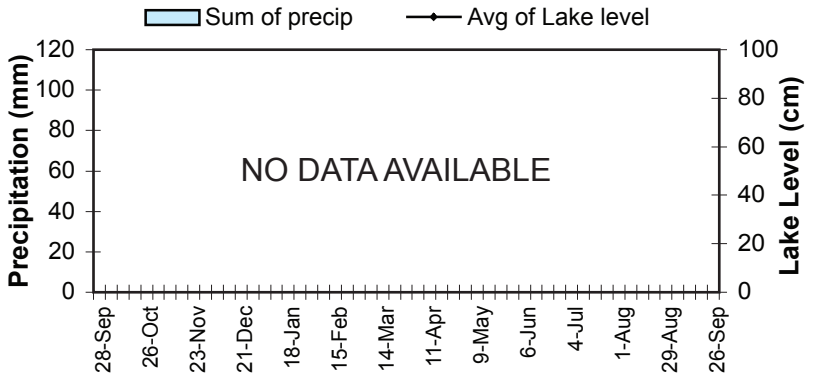
Lake Temperature



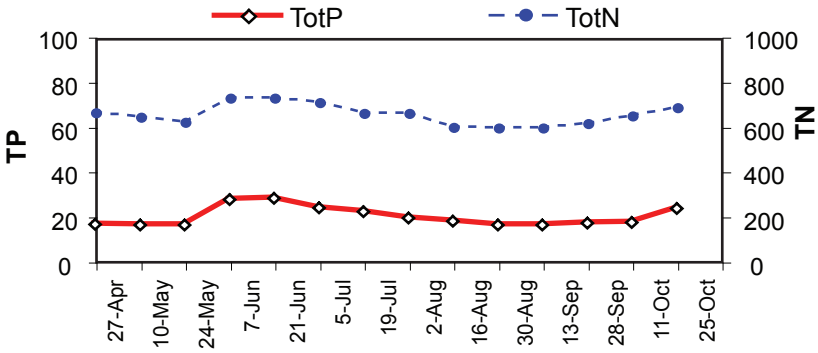
Secchi Depth



Lake Level and Precipitation



Nutrient Analysis



Profile data indicate that thermal stratification was present early in the season, but no deep water temperature was recorded on the second event. Higher concentrations of phosphorus were present in the deep water in May, but not in August, suggesting that stratification was not maintained in between the two dates. Chlorophyll data indicated that algae were higher in abundance away from the surface on both dates.

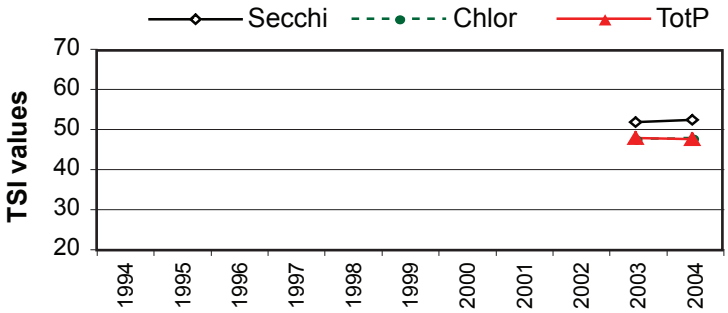
The 2004 TSI values for the three indicators straddled the line between mesotrophic and eutrophic, with TSI-Secchi higher than the other two indicators, similar to 2003. This higher value may be affected by water color as well as trophic state.

Chlorophyll Concentrations and Algae

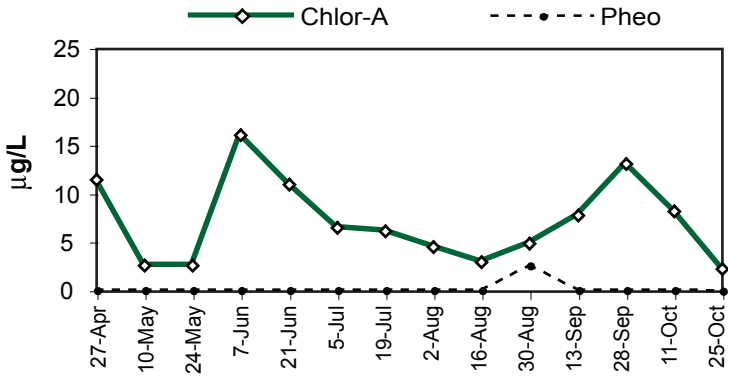
Chlorophyll content peaked in early June and then rose again in late September. The algae were dominated in the spring peak by the bluegreen *Aphanizomenon flos-aquae* and in fall by the diatom *Cyclotella* and the colonial bluegreen *Anacystis*. The chrysophyte *Dinobryon* was also important in the phytoplankton, as was the bluegreen filament *Oscillatoria,* which is often found in bottom sediments and may have floated up from there.

Date	Secchi	depth-m	degC	Chlor-A	TP µg/L	TN µg/L
5/23/04	2.1	1	17.5	2.56	17.1	633
		3	11.5	1.60	16.0	806
		6	6.5	16.30	126.0	1080
8/30/04	1.7	1	20.0	4.80	17.2	608
		4	11.5	29.60	33.8	538
		5			40.6	608

TSI Ratings



Chlorophyll a Concentrations (ug/L)



Common Algae

	Group
Aphanizomenon flos-aquae	Cyanobacteria
Anacystis sp.	Cyanobacteria
Cyclotella sp.	Bacillariophyta

Clark

2004 Level I Data not available

2004 Level II Data

Date (2004)	Temp (°C)	Secchi (m)	Chl-*a* (µg/l)	TP (µg/l)	TN (µg/l)	Algae Obsv.	N:P	Calculated TSI		
								Secc	chl-a	TP
27-Apr	16.0	1.8	11.40	17.5	676	2	39	51.5	54.4	45.4
10-May	16.5	3.5	2.56	17.1	654	2	38	41.9	39.8	45.1
24-May	17.5	2.1	2.56	17.1	633	2	37	49.3	39.8	45.1
7-Jun	18.6	1.6	16.00	28.4	741	3	26	53.2	57.8	52.4
21-Jun	22.8	1.5	10.90	29.0	741	2	26	54.1	54.0	52.7
5-Jul		1.0	6.41	25.0	721	3	29	60.0	48.8	50.6
19-Jul	24.1	1.5	6.09	23.3	672	2	29	54.1	48.3	49.6
2-Aug	24.0	1.3	4.49	20.2	671	1	33	56.2	45.3	47.5
16-Aug	23.5	2.0	2.88	18.8	611	1	33	50.0	40.9	46.5
30-Aug	20.0	1.7	4.80	17.2	608	2	35	52.3	46.0	45.2
13-Sep	18.0	1.9	7.69	17.1	606	1	35	50.7	50.6	45.1
27-Sep	15.0	1.5	13.00	18.1	626	3	35	54.1	55.7	45.9
11-Oct	13.8	1.5	8.17	18.3	662	3	36	54.1	51.2	46.1
25-Oct	11.0	1.8	2.19	24.7	698	2	28	51.5	38.3	50.4
	Temp (°C)	Secchi (m)	Chl-*a* (µg/l)	TP (µg/l)	TN (µg/l)	Algae	N:P	Calculated TSI		
								Secc	chl-a	TP
Mean	18.5	1.8	7.1	20.8	665.7	2.1	33	52.4	47.9	47.7
Median	18.0	1.7	6.3	18.6	666.5	2	34	52.8	48.5	46.3
Min	11.0	1.0	2.2	17.1	606.0	1	26	41.9	38.3	45.1
Max	24.1	3.5	16.0	29.0	741.0	3	39	60.0	57.8	52.7
Count	13	14	14	14	14	14	14	14	14	14

TSI Average = 47.2